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Letter dated 21 April 2016 from the Permanent Representative of Ukraine to the United Nations addressed to the Secretary-General

I have the honour to enclose herewith Ukraine's national progress report at the 2016 Nuclear Security Summit (see annex I), as well as the Nuclear Security Summit 2016 statement on the threats posed by the aggression of the Russian Federation against Ukraine and the nuclear militarization of Crimea to the safety and security of nuclear sites and material of Ukraine (see annex II).*

I would appreciate your assistance in having the present letter and its annexes distributed as a document of the General Assembly, under agenda item 97, and of the Security Council.

(*Signed*) Volodymyr **Yelchenko**
Ambassador
Permanent Representative

* The annexes are being circulated in the language of submission only.

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Annex I to the letter dated 21 April 2016 from the Permanent Representative of Ukraine to the United Nations addressed to the Secretary-General

Ukraine's national progress report

2016 Nuclear Security Summit

Since the 2014 Nuclear Security Summit, Ukraine has strengthened nuclear security implementation and built up the global nuclear security architecture by:

Strengthening nuclear and other radioactive material security

As part of the comprehensive action plan on improving physical protection of nuclear facilities, nuclear material, radioactive waste and other sources of ionizing radiation, strengthening the security of nuclear and radioactive materials on nuclear and radiation-hazardous objects is a constant process.

Organization and implementation of measures for the physical protection of Ukrainian nuclear power plants is being carried out under real threats caused by Russian aggression in eastern Ukraine and worsening of the sociopolitical situation in the country. Under these conditions, to ensure the stable operation of nuclear power facilities, significant efforts are directed at strengthening physical protection, defence and practical training focused on anti-terrorism and anti-sabotage measures at nuclear power plants. Systematic monitoring of crisis situations and elaboration of new approaches to protect nuclear facilities are under way.

Taking into consideration the unstable military and political situation in the east of Ukraine, in order to prevent provocations, mass disorder, incidents with unpredictable consequences, and illegal actions towards nuclear facilities, nuclear material, radioactive waste and other sources of ionizing radiation, in January 2014 the State system of physical protection of Ukraine was switched to a high-alert regime.

Acts of inter-agency committees on the protection of nuclear material, facilities, radioactive waste and other sources of ionizing radiation have been revised and reapproved by competent authorities of Ukraine. According to their provisions, protection of all nuclear power plants in Ukraine has been significantly reinforced.

New plans of coordination in case of sabotage and correspondent plans of action in case of crisis situation were developed and introduced at all Ukrainian nuclear power plants. All-round automated data control systems of engineering and technical means of physical protection have been placed in operation.

Works to assess the vulnerability of all such Ukrainian plants have already been completed.

Physical protection of Ukraine's nuclear facilities, nuclear material, radioactive waste and other sources of ionizing radiation is organized according to current legislation in this field. In order to verify its conformity with legislation, in 2014-2015 regular State inspections were carried out at all nuclear power plants, research facilities, radioactive waste management facilities and entities that use category 1 sources of ionizing radiation in their work.

However, owing to State inspectors' inability to safely perform their duties in Crimea and certain areas of the Donetsk and Luhansk regions, in 2014 only three inspections of the systems of physical protection of radioactive waste management facilities were conducted.

Within the framework of the Global Threat Reduction Initiative, in order to enhance the security of sources of ionizing radiation, physical protection systems were examined in 2015 at the following facilities:

- Vinnytsia regional oncology centre
- Zhytomyr regional oncology centre
- Kyiv regional oncology centre
- Chernihiv regional oncology centre
- Cherkasy regional oncology centre
- Kirovohrad regional oncology centre

Systems of physical protection of radioactive waste and other sources of ionizing radiation were installed and put into operation at radioactive waste management facilities.

On 27 August 2015, the "New design basis threat to nuclear facilities, nuclear material, radioactive waste and other sources of ionizing radiation in Ukraine" was approved by presidential decree.

Project proposals on the modernization of systems of physical protection of nuclear facilities and nuclear waste management facilities, announced in 2014-2015 during the meetings of the Group of Seven Global Partnership against the Spread of Weapons and Materials of Mass Destruction, have been incorporated into the integrated nuclear security support national plan of Ukraine for 2016-2018 and the action plan on its implementation, in particular:

- Technical re-equipment of the physical protection system of the perimeter of the south Ukraine nuclear power plant
- Technical re-equipment of the physical protection system of units 1 to 3 of the south Ukraine nuclear power plant
- Technical re-equipment of the physical protection system of the Khmelnytsky nuclear power plant (establishing the main control panel)
- Technical re-equipment of the physical protection system of the personnel and vehicle access control points in the Rivne nuclear power plant
- Technical re-equipment of the physical protection system of unit 3 of the Rivne nuclear power plant
- Construction of an interim storage facility for long-term storage of vitrified high-level radioactive waste returned from the Russian Federation after processing of spent nuclear fuel from Ukrainian nuclear power plants with WWER-440 units
- Establishing a communication subsystem of the physical protection system of the Zaporizhia nuclear power plant

- Technical re-equipment of the physical protection system of the Zaporizhia nuclear power plant
- Establishing automated complexes of the physical protection system of radioactive waste processing of the Zaporizhia nuclear power plant
- Technical re-equipment of the physical protection system of unit 1 of the Khmelnytsky nuclear power plant
- Strengthening the physical protection system of specialized radioactive waste management enterprises of the UkrDO Radon State Corporation
- Liquidation of radioactive inheritance of the former Soviet Union at specialized radioactive waste management enterprises of the UkrDO Radon State Corporation
- Improving capabilities of the UkrDO Radon State Corporation in ensuring nuclear and radiation safety of spent radiation sources

Currently, after taking into account comments and recommendations of the International Atomic Energy Agency (IAEA) experts, in February 2016 the integrated nuclear security support national plan was approved.

Central long-term storage of spent sources of ionizing radiation is scheduled to be put into service in 2016.

In order to adjust national legislation on physical protection to the IAEA recommendations, in 2016 the resolution of the Cabinet of Ministers of Ukraine on approval of the order of determination of level of physical defence of nuclear facilities, nuclear material, radioactive waste and other sources of ionizing radiation according to their categories will be revised.

Minimizing nuclear and other radioactive material

There are six repositories of radioactive waste and sources of ionizing radiation, which are kept in storage facilities equipped, in accordance with national legislation, with high-level security systems. However, three of those repositories are currently located on the temporarily occupied territories: two in the Autonomous Republic of Crimea and one near the city of Donetsk.

During 2014-2015, competent authorities of Ukraine continued to collect spent sources of ionizing radiation, transferring them to specialized radioactive waste management enterprises of the UkrDO Radon State Corporation. Activity in this field has been carried out in close cooperation with the donor States (USA, Great Britain, Germany and France), the European Union, IAEA and the North Atlantic Treaty Organization (NATO).

On 17 June 2015, the implementing agreement between the Cabinet of Ministers of Ukraine and the NATO Support Agency on the disposal of radioactive waste that accumulated as a result of carrying out military programmes of the former USSR in Ukraine was ratified. According to that agreement, the disposal of nuclear waste repositories is to be conducted at the enterprises of the UkrDO Radon State Corporation with NATO financial assistance.

Countering nuclear smuggling

Ukraine continues to strengthen the radiation control system at its State border. During 2010-2015, within projects of international technical assistance, Ukraine installed and put into operation stationary systems for radiation monitoring in more than 50 border-crossing checkpoints, 7 of which are located in temporarily occupied territories of Crimea and certain areas of the Donetsk and Luhansk regions.

Border guard staff participated in more than 100 training sessions on detecting radioactive (nuclear) materials on the State border using nuclear radiation detectors for control and reconnaissance. Five exercises were devoted to response to detection of radioactive (nuclear) material smuggling.

As part of the agreement with IAEA, advanced training on physical protection and accounting of nuclear material was held for officials of the State Border Guard Service of Ukraine at the training centre for physical protection, accounting and control of nuclear material.

Regular exchange of information between the border agencies of neighbouring countries is ensured by the border guard executives in order to counter smuggling of nuclear and radioactive materials and respond in a timely manner to the threat of nuclear terrorism.

As part of the "Identifying and stopping nuclear smuggling" international technical assistance project in 2015, five obsolete Russian-made stationary systems for radiation detection were upgraded, two new TSA-type American-made modern stationary systems were put into operation, and TSA stationary equipment was supplied for installation in four border-crossing checkpoints on the Ukrainian-Moldovan border.

The preparatory phase of installing new stationary systems for radiation monitoring in six border-crossing checkpoints on the Ukrainian-Belarusian border is under way. Competent authorities of Ukraine are working actively towards the establishment of an automated system for exchange of information on cases of stationary systems being triggered. Such a system will be a potential platform for an inter-agency information and telecommunication system to register facts of detection and intent of illicit trafficking of nuclear and radioactive materials through the territory of Ukraine and across its State border.

The National Academy of Sciences of Ukraine elaborated a draft concept of the State programme of development of nuclear forensics in Ukraine for the years 2014-2020. An agreement was reached to create a regional network of nuclear forensics expertise for the GUAM countries using the funds from European Union technical assistance. Research expert organizations of Ukraine, Georgia, Azerbaijan and Moldova started working on the project in 2015. Its objective is to create a network of nuclear forensics laboratories in the GUAM region, including the expansion of basic technical and information capabilities of national expert laboratories in each participating country and creating a basis for mutual support and cooperation in this area of research.

Within the framework of the Technical Assistance to the Commonwealth of Independent States and Georgia (TACIS) programme and Instrument for Stability (IfS), the Institute for Nuclear Research of Ukraine received a mobile laboratory for on-site actions in response to illicit trafficking incidents. It also received the

Element 2 precision mass spectrometer with inductively coupled plasma for multi-element analyses at trace levels in nuclear material and environmental samples. Such improvements greatly increased the technical expertise capabilities of the Institute.

Supporting multilateral instruments and cooperating with international organizations

Ukraine continued to fulfil its obligations within the framework of the Global Initiative to Combat Nuclear Terrorism according to approved plans, namely, the statement on principles of combating nuclear terrorism and the action plan on improvement of capabilities of States parties to the Initiative to achieve positive results based on multilateral cooperation.

Ukraine confirmed to the IAEA secretariat its readiness to provide interested countries with consulting assistance in the elaboration of laws and regulations on physical protection of nuclear facilities, nuclear material, radioactive waste and other sources of ionizing radiation and to organize experts training in this field.

Partnering with external stakeholders

With the financial support of the US Government and in cooperation with the Lawrence Livermore National Laboratory, Ukraine is working on the creation of a scientific and methodological basis for determining attributes of uranium-bearing materials of different origin and the development of nuclear forensics library data and materials to enhance the effectiveness, efficiency and validity of conclusions of nuclear forensic expertise.

Within the framework of the agreement on nuclear safety and respective memorandum of understanding, Ukraine, jointly with the United States, designed and completed construction of the neutron source based on subcritical assembly driven by linear electron accelerator (neutron source facility). Currently, pre-commissioning works and individual and complex tests are under way at the facility.

Since 2014 the following joint projects aimed at strengthening capabilities in the area of detection of nuclear and radioactive materials have been carried out:

- Detecting and countering nuclear smuggling (US Department of Energy)
- Weapons of mass destruction non-proliferation initiative: assistance to the State Border Service of Ukraine (Defense Threat Reduction Agency, USA)
- Technical assistance to strengthen Ukraine's export control system and countering the proliferation of weapons of mass destruction (US State Department)
- Increasing the capabilities of the border guard services of Ukraine and Moldova to detect chemical, biological, nuclear and radioactive materials (European Commission)

Following the agreement of the 2014 Hague Nuclear Security Summit, the trilateral Swedish-Norwegian-Ukrainian initiative was successfully established. In 2014-2015 seven projects were implemented within the initiative, namely:

(a) *Safety requirements for new types of nuclear fuel*. Project support was provided to the State Nuclear Regulatory Inspectorate of Ukraine to develop requirements for safe implementation of new types of nuclear fuel. These requirements were included in regulations related to safe management of fuel. The project was successfully completed in November 2015. The regulations are currently under consideration by the Ukrainian authorities;

(b) *Tools for probability safety assessment*. Online surveillance systems that enable assessment of safety risks related to the operation of nuclear power plants are being introduced in Ukraine in the framework of this project. Safety assessment software was delivered to the State Nuclear Regulatory Inspectorate of Ukraine and the south Ukraine nuclear power plant, followed by personnel training. Such systems will be installed at other Ukrainian nuclear power plants, as appropriate;

(c) *Safety enhancements at the Rivne nuclear power plant*. Modernization of safety systems of the Rivne nuclear power plant is an element of a package programme on safety enhancement of all nuclear power plant units of Ukraine. Realization of this project will enable detection of nuclear power plant malfunctions at an early stage and timely actions to prevent accidents;

(d) *Safety requirements for damaged nuclear fuel*. The primary objective is to develop regulatory requirements for management of damaged nuclear fuel. The project is in the development phase, with the implementation date set for 2016;

(e) *Modernization of the radioactive source register*. Upon review of the national source register of Ukraine, it was determined that the system required upgrades to meet current regulations and to further improve control of radioactive sources. Assistance in upgrading the system was provided to the authorities that maintain and support the existing national source register. Further development of the database will include applying a web-based system;

(f) *Security upgrades at the Khmelnytsky nuclear power plant*. The project's main goal is to strengthen and upgrade the physical protection system of the Khmelnytsky nuclear power plant. Foreign experts visited the nuclear power plant to assess the volume and value of necessary works. The implementation of the project will begin in 2016;

(g) The thirteenth Ukrainian conference on nuclear security will be organized at the Khmelnytsky nuclear power plant in October 2016. All national stakeholders responsible for nuclear and radiological security will participate in the event to share their experience and expertise.

Issues of concern

Russian military aggression in eastern Ukraine and its illegal annexation of the Autonomous Republic of Crimea posed new threats to the national system of nuclear and radiation security and resulted in loss of regulatory control in those areas.

The following sources and facilities remain without regulatory control in eastern Ukraine:

- 1,200 radionuclide sources of ionizing radiation (category 1-5)

- 65 entities that use sources of ionizing radiation (including 8 that have high-level radiation sources of category 1 with activity of more than 1,000 Ci)
- Donetsk specialized radioactive waste management enterprise of the UkrDO Radon State Corporation
- One repository of radioactive waste and sources of ionizing radiation near the Donetsk chemical plant
- Radiation sources in two coal mining facilities of Donbas, which combine 15 coal mines (142 radiation sources, with the maximum activity of a single source of 2.35×1,011 Bq)

The following sources and facilities are located on the territories of the Autonomous Republic of Crimea and the city of Sevastopol:

- Research reactor of the Sevastopol National University of Nuclear Energy and Industry: DR-100 research reactor, DR-100 (critical assembly) physical test bench, subcritical uranium water assembly, about 3,488 kg of depleted uranium
- 277 radionuclide sources of ionizing radiation
- 53 entities that use radionuclide sources of ionizing radiation, 6 of which use category 1 and 2 radiation sources according to the level of potential hazard (medicine, shipbuilding) in which over 1,200 kg of depleted uranium is used as biological shielding
- Two nuclear waste repositories

Owing to external aggression, Ukraine lost regulatory control on the territories of the Autonomous Republic of Crimea and the city of Sevastopol, as well as communication with the Crimean State Inspectorate. Property of the Crimean State Inspectorate was seized by illegal authorities and handed over to the so-called Council of Ministers of the Republic of Crimea — a regional branch of the Industrial and Nuclear Supervision Service of Russia (Rostekhnadzor).

Companies on the territory of the Autonomous Republic of Crimea lost the possibility of transferring radioactive waste (spent sources of ionizing radiation) for storage to the Odessa State Specialized Interregional Plant.

At present Ukraine cannot guarantee physical protection of the above-mentioned research reactor, nuclear material and sources of ionizing radiation on the territory of Crimea, the city of Sevastopol and certain areas of the Donetsk and Luhansk regions.

Given the occupation of the Autonomous Republic of Crimea by the Russian Federation and ongoing anti-terrorist operation in south-eastern Ukraine, any damage to radiation-hazardous objects located on those territories may lead to dire consequences not only for Ukraine but also for many European nations. Thus, we consider that the issue of establishing international control over nuclear facilities that can be seized or damaged as a result of military actions requires immediate international attention.

Annex II to the letter dated 21 April 2016 from the Permanent Representative of Ukraine to the United Nations addressed to the Secretary-General

Nuclear Security Summit 2016 statement on the threats posed by aggression of the Russian Federation against Ukraine and nuclear militarization of Crimea to the safety and security of nuclear sites and material of Ukraine

Ukraine confirms its firm adherence to the Nuclear Security Summit community goals and principles. We remain fully committed to implementing further joint efforts to promote a stable and strong international nuclear security system.

Ukraine, which abandoned its nuclear arsenal in 1994, has been always devoted to finding peaceful solutions to the existing security threats and challenges supporting the international efforts aimed at achieving the universal disarmament goals.

In 2010, at the first Nuclear Security Summit, Ukraine took another cornerstone decision — to remove its stocks of highly enriched uranium — and, responsibly and in a timely manner, implemented its obligations by the 2012 Seoul Nuclear Security Summit. In this regard, we are grateful to our US partners who fully supported us in this endeavour and provided the relevant technical assistance. We also highly appreciate the assistance of the United States in the completion of the construction of the neutron facility in Ukraine.

During the 2014 Hague Nuclear Security Summit, we appealed to the Nuclear Security Summit community to apply pressure on the Russian Federation (then a member of this forum) and persuade it to withdraw its armed forces from the territory of Ukraine, namely the Autonomous Republic of Crimea. We were insisting that Russia's behaviour constituted a real threat to nuclear security, particularly to the Ukrainian research nuclear facilities in Crimea.

Unfortunately, the Russian Federation not only did not stop its illegal actions in Crimea but also moved further by sending its troops to the Donetsk and Luhansk regions and fuelling terrorist actions against Ukraine.

Undermining the United Nations-based security system by violating the Charter of the United Nations and provisions of the Treaty on the Non-Proliferation of Nuclear Weapons, breaching the IAEA safeguards' application regime, providing shelter to criminals wanted by the International Criminal Police Organization (INTERPOL) and supporting terrorists, the Russian Federation eventually took a logical decision to leave the Nuclear Security Summit process.

This fact is real evidence that the Nuclear Security Summit goals and principles to be implemented in the framework of the United Nations, IAEA, the Global Partnership, INTERPOL and the Global Initiative to Combat Nuclear Terrorism, as well as commitments taken by all of us in 2010, 2012 and 2014, are not recognized by the Russian Federation any more.

On this background the Russian Federation is declaring its right to deploy nuclear weapons on the Ukrainian territory, namely in Crimea. Russian occupants

are thoroughly restoring Soviet-era nuclear storage facilities and have already deployed at the occupied territories of Ukraine the means of nuclear weapons delivery, such as warships and combat aircraft. To facilitate this activity, Russia is likely to install uranium enrichment facilities, organize production of dual-use materials and apply technologies linked to nuclear weapons on the peninsula.

The occupation of the Autonomous Republic of Crimea and ongoing Russian aggression in the east of Ukraine have left the Ukrainian national regulator low-enriched uranium (LEU) research reactor in Sevastopol, two nuclear repositories and more than 1,200 radionuclide sources in Crimea without due control, as well as 277 sites in certain areas of the Donetsk and Luhansk regions, including 65 and 53 sites, respectively, using the sources of ionizing radiation.

In such circumstances we cannot exclude the illicit trafficking and malicious use of these sources and could even tackle the threats posed by eventual smuggling of highly enriched uranium to and from the occupied Ukraine's Crimea.

For example, in July 2015 the Security Service of Ukraine discovered that Luhansk-based terrorists sold a number of sources of ionizing radiation from the occupied coal mine in the Luhansk region, which was lately found in the populated area in the Donetsk region.

As a result of the Russian aggression, Ukraine cannot resume control over more than 400 km of its border. These sections of the border can be used by traffickers to illegally transfer to Ukraine and further in Europe radiation sources from Russia. The recent reports of the Ukrainian law enforcement agencies demonstrate that this is a real scenario. Just recently, in March 2016, the Security Service of Ukraine intercepted in the Zaporizhia region three sources of ionized radiation, which, allegedly, arrived in Ukraine through the uncontrolled sections of the Ukraine-Russia border.

In this regard, we underscore the need for continued efforts by the Nuclear Security Summit participating States to strengthen nuclear security to prevent terrorists, criminals and all other illegal armed groups from acquiring nuclear and other radioactive material, especially when such material is placed at risk by conflict or unrest.

We count on the firm support of the international community in ensuring the territorial integrity of Ukraine within its internationally recognized borders, with a view to stopping nuclear proliferation and mitigating threats emerging from the Russian aggression.

Ukraine welcomes the unequivocal decision of IAEA to apply safeguards to all nuclear sites and material on the whole territory of Ukraine, including those located on the occupied territories, in conformity with international law and relevant agreements between Ukraine and the Agency.

Ukraine fully supports the action plans for the United Nations, IAEA, INTERPOL, the Global Partnership and the Global Initiative to Combat Nuclear Terrorism aimed at the advancement of the principles and goals of nuclear security summits beyond 2016. The guidelines for the States and international organizations embedded in these documents should mitigate the consequences and roots of weakened nuclear safety and security architecture in the conflict areas.